

STATE OF NORTH CAROLINA

Approved Classification: _____

OFFICE OF STATE PERSONNEL

Effective Date: _____

Analyst: _____

POSITION DESCRIPTION FORM (PD-102R-92)

(This Space for Personnel Dept. Use Only)

1. Present Classification Title of Position Transportation Technician IV	7. Pres. 15 Digit Position No.	Prop. 15 Digit Pos. No.
2. Usual Working Title of Position Assistant Group Leader	8. Department, University, Commission, or Agency Transportation	
3. Requested Classification of Position Transportation Technician V	9. Institution & Division Highways	
4. Name of Immediate Supervisor	10. Section and Unit Location & Surveys	
5. Supervisor's Position Title & Position Number Transportation Engineering Supervisor II 00931	11. Street Address, City and County 1020 Birch Ridge Road, Raleigh, Wake	
6. Name of Employee	12. Location of Workplace, Bldg. And Room No. Century Center, Bldg. B	

I. A. Primary Purpose of Organizational Unit:

The primary purpose of Location & Surveys is to serve as support services in providing engineering analysis, mapping and other data for the design of transportation facilities and the acquisition of property for the construction of transportation facilities.

B. Primary Purpose of Position:

This is the highest level of technical support in the Unit, performing a wide variety of the most complex and advanced assignments including analyzing, evaluating, and editing higher level engineering and other survey information. This includes but is not limited to reviewing establishment of project control networks utilizing Global Positioning System (GPS) and/or conventional survey methods: involves review of data developed through technical procedures such as Subsurface Utility Engineering (SUE) and Vanguard 505, which are not available through Unit or other NCDOT staff. Work involves an extremely wide range of independent decision-making and use of judgment, especially in review of data developed by others and in review of technical and fiscal procedures followed by others. Employee will be involved in the training of private engineering firms in proper NCDOT and Location & Survey procedures for data collection and format. Employee will check and review technical aspects of survey data and mapping primarily from contracted consultants, to ensure that proper procedures are followed and appropriate accuracies are obtained according to NCDOT, Location & Survey, and generally accepted surveying standards. Employee will be responsible to ensure that required survey information on turn-key projects is collected and transmitted to other users. Other duties will involve close coordination with other Units within NCDOT to ensure that all formats of engineering data can be compatible with the desired formats as specified from other Units. Work is performed under very limited technical and fairly limited administrative supervision, and may include other duties and responsibilities as assigned.

C. Work Schedule:

8:00 AM to 5:00 PM, or some variation thereof, Monday through Friday, for a total of 40 hours per work week. Flex time or seasonally variable work hours may be used on occasion based upon needs and circumstances.

D. Change in Responsibilities or Organizational Relationship:

This is a new position created to provide for a higher level of technical support in the Unit. Increased utilization of private engineering firms (PEF) in all aspects of route location work, including use of GPS and Computer Aided Design/Drafting (CADD), integration of digital-based data, increased use of the NC State Plane Coordinate network, and increased involvement in the legal aspects of right of way acquisition have created a greater need for review of high-level technical information prepared by others. Increased use of special technologies available only through PEF contracted services has placed a greater need for higher level technicians in this Unit. Creation of this level of technical position allows for better review of surveys prepared by others and a better utilization of the Transportation Engineer I as an entry-level engineer.

II. A. DESCRIPTION OF RESPONSIBILITIES AND DUTIES: Method Used (Check One) Order of importance: X
Sequential order: _____

Place an asterisk (*) next to each essential function. (See instructions for complete explanation.) Please note percentage of time for each function.

No. %

- 1 40% **Scoping, Planning, and Coordinating** - This position will be involved in the initial evaluation and scoping of projects to be surveyed and designed through the Design Services Unit, to determine feasibility of requests and the methods used in project development. This position will insure that proper survey procedures are used to complete survey assignments. This position will review traffic control plans with the TE I and private surveyors to assure the work can be safely completed within the work zone. The employee in this position will assist in evaluating a consultant's work load to determine which projects to be assigned to the appropriate PEF. The duties will include participating in preparing time estimates. This position will advise PEF staff on technical procedures required by Location and Surveys. This employee will review PEF recording sessions for survey crews utilizing blockage charts prepared by the survey crews and ephemeris downloaded from satellites. This position will evaluate the project horizontal and vertical control needs for PEF projects and assist PEF in the design, adjustment, and evaluation of the horizontal and vertical control networks. This employee will be responsible for creating project files to insure control data can be utilized by the department throughout the life of the project. This position will be responsible for the review and evaluation of special survey services (and data developed from those services) provided through Unit limited service contracts. This include but may not be limited to Subsurface Utility Engineering (SUE) and location, and pavement surveys using Vanguard 505. This position will be responsible for the evaluation and review of procedures and technologies to be supplied only through limited service agreements and not provided by Unit or other NCDOT staff.
- 2 35% **Inspection and Review** - This employee will be responsible for reviewing and evaluating PEF project data for accuracy, completeness and compliance to standards, and require revisions as needed. This position will make field visits to insure correct format and that acceptable surveying standards and procedures are met. This position can make field revisions in PEF activities or cease activities of PEF crews in order to review or correct inaccurate or erroneous procedures. Responsibilities will include compilation and/or review of mapping for TIP projects as pertaining to Consultant contract work. This position evaluates the performance of PEF's for Location & Surveys and provides input into the rating of those firms for use by upper management in awarding engineering contracts. This position will review preliminary design plans and attend field plan inspections as directed by supervisor. This position will be responsible to ensure that all technical procedures are followed by the PEF, and to ensure that all fiscal and contractual policies are followed by both Unit and PEF staff in the performance of their duties as related to PEF work.
- 3 10% **Administrative Duties and Data Management** - This position will be responsible for maintaining the integrity of all PEF data either hard copy or electronic through proper storing and/or archiving of data. This data will need to be archived in its original format as received from contracted consultants for use with possible future litigation over data disputes. This will insure to NCDOT that the liability of data remains with the contracted consultant. This employee will also be responsible for maintaining and updating databases pertaining to PEF work such as Evaluation databases, PEF employee listings of qualifications, procedures, minority firms, equipment, and manpower of PEF consultants. All of this will require extensive use of computers and specialized software.
- 4 10% **Invoicing and Authorization of Payment for PEF Work** - This position will review monthly invoices for accuracy and completeness and documenting payments on project datasheets and contract fee schedules in an electronic cost summary database for each project. This will require close coordination within L&S field offices and with the PEF to ensure contracted consultant is paid accordingly to work completed.
- 5 05% **Unit Support: Training of PEF Personnel** - This position will be responsible for updating PEF consultants on new procedures and changes in policy as directed by the administration of the NCDOT and the L&S Unit. This includes office and field training in survey procedures and mapping requirements as they apply to NCDOT projects. This will require either one on one correspondence with all contracted PEF's or close coordination with Internet Web Page Coordinators to ensure all PEF consultants are kept up to date with current Policies and Procedures.
- 6 05% **Other Duties** - as defined by higher level engineers or supervisors.

II. B. OTHER POSITION CHARACTERISTICS: (con't)

1. Accuracy Required in Work:

Engineering and surveying measurements and calculations necessary to millimeter reporting is required. A thorough knowledge of necessary data and proper format is needed. A thorough knowledge of the legal and technical aspects of route location, geodetic surveys, boundary surveys, and others as listed above.

2. Consequence of Error:

Project delays and increased costs in preconstruction project development and during construction can result from poor execution of the duties of this position. Inaccurate procedures and/or failure to follow established guidelines and procedures can result in erroneous data being conveyed to others for use in design or property acquisition, requiring resurveys and redesign causing project delays and cost overruns. Poor understanding of legal and/or technical aspects can result in additional costs for litigation or further costs in proper establishment of boundaries and projected alignments. Errors in tracking projects for pay purposes can result in under- or over-payment to PEF doing contracted work for NCDOT.

3. Instructions Provided to Employee:

Position requirements include sufficient experience and knowledge to enable the employee to perform the duties of this position. Goals are defined and procedural guidelines are established. Deadlines are established when applicable. It is usually up to the employee to ensure completion of tasks in a timely and accurate manner, and to determine the best method to resolve issues, provide and present data, or prepare for the assigned task. Instructions may be either oral or written and may be general or specific in nature, according to the type and scope of work.

4. Guides, Regulations, Policies and References Used by Employee:

NCDOT Highway Design Manual; AASHTO Geometric Design Policy; CADD and other computer references and manuals; General Statutes of North Carolina as related to Highways; NCDOT Personnel Manual; NCDOT Field Fiscal Procedures Manual; NCDOT Workplace Safety Manual; NCDOT and FHWA Manuals on Uniform Traffic Control Devices (MUTCD); Legal Principles of Boundary Surveying and other legal texts on surveying; various engineering and surveying texts including cadastral, geodesy, and route location; general practices, principles, procedures, and ethics of professional engineering and surveying as described by the NC State Board of Registration for Professional Engineers and Registered Land Surveyors; dictionary.

5. Supervision Received by Employee:

This employee is under the supervision of the L&S PEF Coordinator. Very little daily instruction or supervision is provided on 90% of the duties of the position. Technical problems are either resolved at this level or referred to supervisors for involvement and resolution. Tasks and duties may be reviewed during and after completion, but due to the independent operation of this position, specific activities that lead to task accomplishment are not often reviewed. Personnel matters are reviewed with immediate supervisor as needed. Personnel problems and PEF contractual problems are referred to supervisor for resolution.

6. Variety and Purpose of Personal Contacts:

Personal contact is with the general public, staff of other Units, Divisions, or Branches of NCDOT, representatives of private engineering firms that may be doing work for this Unit, County Manager's or Register of Deed staff working in tax offices, municipal engineering units, and utility representatives. Contact with property owners will be required on special projects or as required by the Group Leader.

7. Physical Effort:

Physical labor involves both office and field work. Outside work may occur in any type of geographic conditions, at any time of day. Some physical labor such as traversing rough terrain, chopping brush, or carrying heavy or cumbersome equipment may be required at times. Travel to different areas of the state may be required for some tasks.

8. Work Environment and Conditions:

Work is 70% indoors, in a controlled environment; 30% of work requires field visits or activities in project development and review. Outside work is subject to any type of weather conditions and may involve periods of time in adverse conditions. This employee may be exposed to high volumes of traffic, animals, insects, snakes, and poisonous plants. Employee may also be required to confront irate citizens.

9. Machines, Tools, Instruments, Equipment and Materials Used:

Computers; CADD workstations; hand-held calculators; triangles, scales, and other hand-drafting or measuring equipment; manuals; large photographs and plan sheets; telephone. A working knowledge of the operation of survey equipment such as plumb bobs, electronic theodolites, GPS receivers, tripods, bush axes, and others is required. Operation of motor vehicles is required.

10. Visual Attention, Mental Concentration and Manipulative Skills:

Computer/calculator operation, writing memos, and compiling reports require keypunch and writing abilities. Mental concentration is required to plan and coordinate survey activities, review data, solve surveying and engineering problems, and work with others in problem solving. Visual as well as mental attention and ability is required in reviewing data and project evaluation.

11. Safety for Others:

This position is responsible for the review of safety plans for surveys on transportation projects, which could impact both field survey crews and the traveling public. This employee is also responsible to ensure that PEF employees are trained in proper field and equipment safety procedures required by NCDOT and that PEF has made protective equipment and supplies available for use in the field by survey personnel and others who may be exposed to hazardous conditions during survey activities.

12. Dynamics of Work:

Engineering and design standards are often revised. Methods, procedures, and equipment used for collecting route location and other survey data, including survey equipment and computer hardware and software, are always being revised, upgraded, or improved. These changes require a continuous upgrading and maintenance of knowledge of the engineering and surveying professions.

III. KNOWLEDGES, SKILLS & ABILITIES AND TRAINING & EXPERIENCE REQUIREMENTS:

A. Knowledges, Skills and Abilities:

Thorough knowledge of procedures, methods and equipment used in performing engineering and other surveys. Thorough knowledge of mathematical applications, including algebra, geometry, and trigonometry. Skilled in CADD, skilled in the use of survey instruments, including GPS receivers, data collectors, and skilled in the use of office equipment such as calculators and computers. Ability to read, interpret and explain such things as construction plans, court records, title records, technical and procedural manuals. Ability to plan, direct, supervise, train, and evaluate the work of lower level technicians; ability to understand and follow written or oral instruction, communicate with the general public and other non-technical groups; take notes and prepare or review reports.

B. 1. Required Minimum Training:

Graduation from a two year technical college with a degree in Civil Engineering or Survey Technology and six years of progressive transportation experience.

2. Additional Training/Experience:

Additional training as needed will be supplied by supervisor and Location & Surveys Unit or NCDOT Training Personnel.

3. Equivalent Training and Experience:

Graduation from high school and nine years of progressive transportation technician experience; or an equivalent combination of training and related experience. In lieu of a civil engineering degree (BS or AS), successful completion of the ITRE Highway Engineering Concepts Course will be required.

C. License or Certification Required by Statute or Regulation:

NC Driver's License is required.
North Carolina Registered Land Surveyor preferred.

IV. CERTIFICATION: Signatures indicate agreement with all information provided, including designation of essential functions.

Supervisor's Certification: I certify that (a) I am the Immediate Supervisor of this position, that (b) I have provided a complete and accurate description of responsibilities and duties and (c) I have verified (and reconciled as needed) its accuracy and completeness with the employee.

Signature _____ Title: _____ Date: _____

Employee's Certification: I certify that I have reviewed this position description and that it is a complete and accurate description of my responsibilities and duties.

Signature _____ Title: _____ Date: _____

Section or Division Manager's Certification: I certify that this position description, completed by the above named immediate supervisor, is complete and accurate.

Signature _____ Title: _____ Date: _____

Department Head or Authorized Representative's Certification: I certify that this is an authorized, official position description of the subject position.

Signature _____ Title: _____ Date: _____